

Bert W. King
24 Jones Avenue, Greenville, SC 29601

July 29, 2007

Ms. Marlene H. Dortch, Secretary
Federal Communications Commission
455 12th Street N.W.
Washington, DC 20005

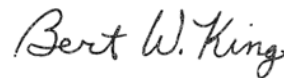
Re: MB Docket No. 07-57

Dear Ms. Dortch:

I respectfully submit my comments regarding the rule prohibiting the transfer of control of one SDARS license to the other in the proceedings for Consolidated Application for Authority to transfer Control of XM Radio Inc. and Sirius Satellite Radio Inc.

I have previously submitted comments urging the Commission to deny the merger. As a shareholder in both Sirius and XM and a multiple subscriber to XM, I see no merger-specific, public benefit under the current proposal put forth by XM and Sirius. However, if the two could move to a single broadcasting platform within one or two years after a merger and make use of the bandwidth made available, I might be persuaded that this is in the public interest. Otherwise, I urge the Commission to maintain the rule prohibiting the transfer of control.

Sincerely,

A handwritten signature in cursive script that reads "Bert W. King".

Bert W. King

Before the
FEDERAL COMMUNICATIONS COMMISSION
Washington, D.C. 20554

_____)	
In the Matter of)	
)	
XM Satellite Radio Holdings Inc.,)	
Transferor)	
)	
and)	
)	MB Docket No. 07-57
Sirius Satellite Radio Inc.,)	
Transferee)	
)	
Consolidated Application for Authority to)	
Transfer Control of XM Radio Inc. and)	
Sirius Satellite Radio Inc.)	
_____)	

Comments of Bert W. King on Rule Prohibiting the Transfer
of Control of One SDARS License to the Other

Bert W. King
24 Jones Avenue
Greenville, SC 29601

1. Introduction and Summary

1. In the its March 03,1997 release of its Report and Order, Memorandum Opinion and Order, and Further Notice of Proposed Rulemaking, the Commission wisely established the following rule for the SDARS licensees to ensure competition¹:

Even after DARS licenses are granted, one licensee will not be permitted to acquire control of the other remaining satellite DARS license. This prohibition on transfer of control will help assure sufficient continuing competition in the provision of satellite DARS service.

2. The Commission solicited comments for years before establishing the rules regarding SDARS. Any changes should not be taken lightly. The Commission is the maker and enforcer of these rules. If the Commission believes it to be a binding rule, for all practical purposes, it is indeed a binding rule. If and only if it is clearly in the public interest should the Commission waive, modify, or repeal the rule after seeking public comment.
3. It would not seem to be in the public's best interest under the plans currently disclosed by XM and Sirius. Under the current proposal, XM and Sirius propose to broadcast substantially the same content in each of the two frequency bands for the foreseeable future. This is a waste of the public's resources. There is no clear, merger-specific public benefit to the merger, until the combined entity is able to operate on a single platform. According to congressional testimony, this will not happen for 10 to 12 years after the merger². This is too long for the public to wait to reap the benefit of the merger and should be considered, at best, speculative.

¹ Report and Order, Memorandum Opinion and Order, and Further Notice of Proposed Rulemaking, March 03, 1997, paragraph 170.

² MarketWatch, "Sirius, XM to Use Separate Networks Unit 2016-CEO", by Corey Boles, March 07, 2007

4. Once the combined entity is on a single broadcasting platform, it will truly be able to offer expanded content when new radios are available. It is only then that the SDARS can live up to the expectations of more content and greater diversity.
5. If XM and Sirius were to devise a method to merge to a single platform in a shorter time frame, such as one or two years, then it might be deemed to be in the public interest. Without such a plan, I strongly urge the Commission to enforce the current rule. The combined entity must not be allowed to waste this valuable public resource. It's one thing when it is in the name of competition; it is something altogether different when the same entity does it.
6. Before dispensing with the rule, I urge the Commission to consider the desire of others, such as Primosphere, to enter into the SDARS market. Another entrant to the SDARS market would mitigate the anticompetitive effects of the merger and reduce the need for government regulation.

2. Bandwidth Constrained

7. The biggest impediment to offering more content and diverse programming today is lack of bandwidth. The SDARS providers have gone well beyond the music and news and have provided other compelling content to its subscribers such as traffic and weather reporting, major league and college sports, and top-level talk show hosts such as Howard Stern. They have also added significant Canadian content, including several French music channels. In doing so, it has come at a cost. XM411, a forum dedicated to XM subscribers and investors, has a couple of threads that document the degradation

in sound quality over the years as the content has been expanded^{3,4}. Toyota has already expressed concerns over sound quality⁵:

Bandwidth & Audio Quality:

With a finite bandwidth for both XM and Sirius, it may be difficult for a combined entity to deliver more content while maintaining or even improving audio quality. It is Toyota's hope that audio quality can be improved over time while maintaining or expanding existing services.

8. On July 29, 2005, Sirius asked the Commission to give it the available bandwidth in the MSS 2 GHz spectrum, saying:

But Sirius' 12.5 MHz of downlink spectrum is **fully loaded**⁶, and Sirius needs additional spectrum to allow for its continued success, subscriber and programming growth, and further innovation⁷.

To maximize the efficiency of its current spectrum resources, Sirius has employed all available compression techniques while still maintaining the highest sound quality. Even with these gains in spectrum efficiency, Sirius' 12.5 MHz of downlink spectrum is **fully loaded**⁸. As a result, Sirius needs more spectrum for its widely popular, fast growing service⁹.

9. Clearly, XM and Sirius need additional bandwidth to expand content and add diversity.
10. Yet, Sirius and XM have indicated that they would expand content and add diversity while maintaining two platforms for the foreseeable future and maintaining a comparable base level of service at the same price.

³ Have you contacted XM about Sound Quality Since March 06?
(<http://www.xm411.com/phpbb/viewtopic.php?t=25509>)

⁴ XM Radio's greatly diminished sound quality. What to do?
(<http://www.xm411.com/phpbb/viewtopic.php?t=25181>)

⁵ See page 2 of the comments filed by Toyota in this proceeding, dated July 09, 2007

⁶ Emphasis added.

⁷ See Sirius comments for "use of Portions of Returned 2 Ghz Mobile Satellite Service Frequencies", Introduction and Summary, IB Docket No. 05-221, dated July 29, 2005.

⁸ Idem

⁹ See Sirius comments for "use of Portions of Returned 2 Ghz Mobile Satellite Service Frequencies", II. Sirius is a Successful Satellite Venture that Requires Additional Spectrum, IB Docket No. 05-221, dated July 29, 2005.

11. It is incumbent upon XM and Sirius to explain how this technological feat will be accomplished. It would seem logical that in order to add content, something would have to be given up. For example, a music channel could be given up to offer Take Five and Oprah on Sirius. Alternately, the bit rate on the music channels could be reduced across the board to make room for additional content. This is the low hanging fruit, but it comes at the cost of reduce sound quality. There is the possibility of adding sports content with different seasons. For example, the NFL could be added to XM during the fall season when MLB was not in season. However, there is no evidence that such contracts have been negotiated or that the combined entity would find the terms acceptable. Until such evidence is available, the same premium sports or talk content on both platforms should be considered speculative.

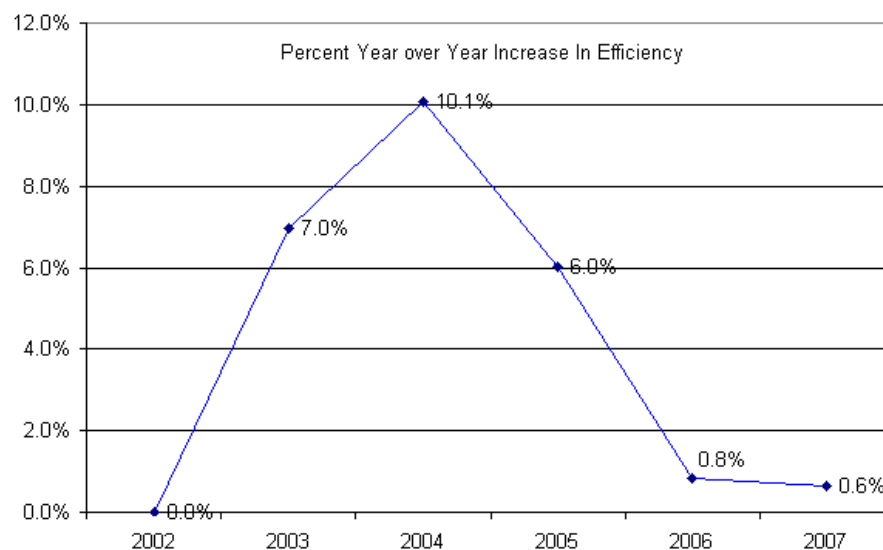
12. It is clear that it will be difficult to add high bit rate channels such as a music channel without a one for one substitution. Indeed, most of the recent channel additions have been talk. Any change in bit rate for the existing channels or any fewer channels would represent less value to the consumer.

13. In its recent opposition, XM and Sirius outlined how this technological feat MIGHT be accomplished¹⁰. Three basic methods were outlined: natural evolution of the technology, combining technologies, and seasonal substitution.

14. The studies are flawed in many ways.

15. Charts show how Sirius has progressed from 100 channels in 2002 to 141 channels in 2006. On the surface, it appears that Sirius increased its efficiency by 41% over these years. However, music, talk, and data are generally transmitted at different bit rates.

The study indicated a bit rate of 40 kbps for music and 16 kbps for talk. For sake of argument, I make the assumption of 4 kbps per second for data. To get a better indication of the year over year increase in efficiency, I established the number of music channel equivalents based on the above bit rates. It is based on the assumption that the sound quality has remained the same, although there is plenty of anecdotal evidence to suggest otherwise. The chart below shows the estimated year over year increase in efficiency in music channel equivalents. Data for 2007 was added based on Sirius' Everything offering¹¹. As one might expect, efficiencies are easy to obtain early on but eventually become harder and harder to achieve. The analysis on Sirius' behalf indicates that an 8.5% increase in efficiency is needed in order to add 11 channels. I submit that within the next year or even several years, it is unlikely to happen with the natural evolution of the technology. They have already picked the low hanging fruit. It will take a quantum leap in technology to make it happen. Quantum leaps are difficult to predict and often involve a complete rethink of the technology.



¹⁰ Joint Opposition to the Petitions to Deny and Reply Comments of Sirius Satellite Radio Inc. and XM Satellite Radio Holdings Inc., dated July 24, 2007

¹¹ Assumed no increase in data channels. Data channels are generally low bit rate channels and would have little impact on the results.

16. The Sirius study suggests that “Enhanced Psychoacoustic Model (EPM) developed for Sirius and used in PAC can also improve the coding efficiency of the AAC codec”. This is flawed in a number of ways:

- a. The study applies EPM to a CODEC that is not the same CODEC that XM uses, AAC. XM, we are told, uses a more advanced version of the AAC CODEC, AAC+. In fact, it is a proprietary version of it, according to the report¹². We don’t know if the results would be the same; however, one might assume that it is reasonable that the process could be applied to any CODEC.
- b. Doesn’t suggest how it can be done on the Sirius platform (although one might assume it could be done with neural processing). It is highly doubtful that both EPM and neural processing can both be applied.
- c. Doesn’t take into account the neural and other processing that XM uses. EPM and neural processing appear to be different technologies that appear to accomplish the same thing, to take advantage of how the human ear perceives sound, eliminating and masking sounds, and enhancing the sounds to which the human ear is responsive. There is no evidence to support that combining these two approaches would provide any improvements whatsoever. In fact, since the two approaches are attempting to affect the same parameters, one might logically think there is very little to be gained. XM also uses Spectral Band Replication (SBR), which the study did not take into account.

¹² In fact, XM’s audio codec utilizes a proprietary version of the aacplus (MPEG 4 HE AAC) open standard, which uses Spectral Band Replication (SBR) to further enhance compression efficiency.

17. Statistical multiplexing is another method that XM might use to improve its efficiency.

This may be true, but what comparable technology will Sirius use to improve its efficiency further? We are left without an answer. The study only cites its belief that XM has the ability to implement statistical multiplexing¹³. What if the “hooks” are insufficient or not there? It is not clear that XM has the processing power to handle statistical multiplexing or that its system could accommodate varying bit rates. Without further study, XM’s use of statistical multiplexing should be considered speculative.

18. While seasonal substitution will work with certain sports, there is no evidence that XM or Sirius will offer such sports. Indeed, many of the claimed benefits of the merger have been that Sirius subscribers would receive premium programming such as MLB, O&A, and Oprah and XM subscribers, NFL, Stern, and Martha Stewart. There is no evidence that such programming will be made available to either. No one knows if the “best of” will truly be the “best of”. It will be a bitter disappointment to many consumers if the premium content is not offered on each other’s system. This is often the reason given for supporting the merger.

19. Sirius can’t have it both ways. It can’t say that it has used all available compression techniques in mid-2005 and two years later claim that it hasn’t. Indeed, in the chart above, it is evident that the last major enhancement was in 2005. As noted above and reiterated here, Sirius stated in 2005:

To maximize the efficiency of its current spectrum resources, Sirius has employed all available compression techniques while still maintaining the highest sound quality. Even with these gains in spectrum efficiency, Sirius’ 12.5 MHz of downlink spectrum is **fully loaded**^{14,15}.

¹³ “... it is our understanding that the XM transmission system accommodates the necessary “hooks” to invoke similar features.”

¹⁴ Emphasis added.

20. If the combined entity could move to a single platform, it would nearly double the amount of bandwidth available to expand content, add diversity, and improve sound quality without compromise.

21. Sirius and XM apparently cannot move to a single platform because they never fully developed the interoperable radio, as the Commission required them to.

3. Interoperable Requirement

22. Interoperability lies at the heart of whether or not this merger should be approved and whether the rule regarding control of the license should be waived.

23. On October 06, 2000, XM and Sirius notified the Commission that they had met the receiver design requirements¹⁶. In this letter, they acknowledged the requirement. Sirius' requirement was stated as:

IT IS FURTHER ORDERED that this authorization is subject to certification by [Sirius] that its final receiver design is interoperable with respect to [XM's] Satellite Digital Audio Radio Service system final receiver design.¹

The XM requirement was stated as:

IT IS FURTHER ORDERED that this authorization is subject to certification by [XM] that its final user receiver design is interoperable with respect to [Sirius'] Satellite Digital Audio Radio Service system final design.²

They went on to state the design requirements under 25.144(a)(3)(ii) of the Commission's rules:

¹⁵ See Sirius comments for "use of Portions of Returned 2 Ghz Mobile Satellite Service Frequencies", II. Sirius is a Successful Satellite Venture that Requires Additional Spectrum, IB Docket No. 05-221, dated July 29, 2005.

¹⁶ Letter to Magalie Roman-Salas, Secretary FCC, from Carl R. Frank and Lon C. Levin, dated October 06, 2000, "Compliance with the Commission's Satellite DARS Interoperable Receiver Requirements".

Certify that its satellite DARS system includes a receiver that will permit end users to access all licensed satellite DARS systems that are operational or under construction.

24. The “substantial technological overlap” and “technological coordination” allowed them to slap “a Sirius circuit board together and an XM circuit board, each containing its own receiver”, into a single casing, thereby creating an interoperable receiver. The two insist today that it has interoperable receivers today. If the Commission accepts their definition, then this is indeed true. Any customer today can go down to the local Best Buy and buy a Sirius and an XM receiver and super-glue them together and, voila, an interoperable radio. I urge the Commission to reject this definition.

25. XM and Sirius seem to hang their hat on the part codified into law, 47 CFR 25.144(3)(ii): “Certify that its satellite DARS system includes **a receiver**¹⁷ that will permit end users to access all licensed satellite DARS systems that are operational or under construction.” They interpret to mean that as long as they have “a design” the requirements have been met. If such an order was given today, that might be correct. However, one must put this into context. The Commission was addressing the design of their systems before they ever developed their respective receivers or launched their satellites. It was appropriate for the Commission to say that their design must include a receiver for interoperability. The Commission was very clear that for each company “its final receiver” design must be interoperable. With each generation of chipsets, each company has its final receiver design. It is not “a design”; it is “its final receiver” design, one design.

26. The Commission clearly expected the two to come together on a final chipset design and to produce the chipsets in quantity. Indeed, XM and Sirius gave the Commission this

impression themselves. When XM requested permission to launch replacement satellites, the Commission reminded XM and Sirius of their commitments towards an interoperable receiver. It is evident that the Commission, at that time, was not in agreement with XM and Sirius that the requirement had been met:

In our recent authorization of XM Radio for the launch and operation of replacement satellites,⁴ we noted that Sirius and XM Radio have on file a letter dated October 6, 2000, in which the two SDARS licensees announced an agreement to develop a unified standard for satellite radios, and stated their anticipation that interoperable chips capable of receiving both services would be produced in volume in mid-2004.⁵ The two licensees also stated their agreement to introduce interim interoperable radios, prior to the introduction of fully-interoperable chipsets, that would include a common wiring harness,

On March 14, 2005, XM and Sirius responded to the Commission's request for an update to the development of interoperable receivers. They reiterated that they had met the requirements. At this time, they backed away from having chipsets manufactured in quantities, leaving it to the manufacturers to decide whether or not they wanted to pursue it. In granting Sirius the authority to launch and operate a geostationary satellite earlier this year, the Commission appears to have not accepted that Sirius had met the obligation¹⁸. The Commission makes it clear that it is expecting more than a design:

3. The authority granted herein to operate SIRIUS FM-5 is without prejudice to any action that the Commission may take regarding Sirius's compliance with the requirement that its system include a receiver that will permit end users to access all licensed SDARS systems that are operational or under construction.

27. To understand the intent of this interoperable requirement, it is necessary to go back to the March 03, 1997 release of its Report and Order, Memorandum Opinion and Order,

¹⁷ Emphasis Added.

¹⁸ See grant for "Application to Launch and Operate Geostationary Satellite Sirius FM-5", SAT-LOA-20060901-00096, granted April 16, 2007.

and Further Notice of Proposed Rulemaking¹⁹. Speaking of the design of their systems, the Commission stated:

As an alternative to this Commission mandating standards we will require that a satellite DARS applicant, in its application, certify that its satellite DARS system will include a receiver design that will permit users to access all licensed DARS systems that are operational or under construction. Satellite DARS licensees, during the construction of their satellite systems, will have an opportunity to work among them toward a final receiver design.

28. It is clearly a two-step process: 1) The SDARS providers were to include a receiver design in their application; and, 2) while the satellites were under construction, the two would work towards “a final receiver design”. To further clarify, as shown above, in its grants to the SDARS providers, they stipulated that they must come to a final, interoperable receiver design.

29. The intent of this requirement is outlined below:

By promoting receiver inter-operability for satellite DARS, we are encouraging consumer investment in satellite DARS equipment and creating the economies of scale necessary to make satellite DARS receiving equipment affordable. This rule also will promote competition by reducing transaction costs and enhancing consumers' ability to switch between competing DARS providers.

30. The last sentence is the part that presents the problem. The consumer has never been able to switch from one service to the other without encountering significant costs in hardware. This is particularly burdensome for those that have factory installed, integrated radios. By switching services, one not only loses money but also loses the integrated features, such as steering wheel channel selection or voice activated

¹⁹ Report and Order, Memorandum Opinion and Order, and Further Notice of Proposed Rulemaking, March 03, 1997, paragraphs 102-107.

commands. It is the very reason why there is no competition between XM and Sirius for the OEM factory installations.

31. The only way the consumer can benefit is if the interoperable requirement is mandated.

It can't be optional. The Commission, it appears, did not intend for it to be optional. If it is optional that these interoperable chipsets be manufactured, it will never happen. There is simply no incentive to XM and Sirius, except as a merged entity. It might behoove the Commission to mandate the interoperable requirement and verify that the final receiver design for both companies comply before considering the merger any further.

32. To take advantage to the a la carte options proffered by XM and Sirius, consumers will have to buy new radios to benefit from the merger. If there are 15 million total subscribers and each radio conservatively costs \$100 to buy and install, it will come at a cost of \$1.5 billion to the consumer, because XM and Sirius did not live up to the intent of the interoperable receiver. That is a huge cost to pass on the to consumer for their failure to implement the interoperable requirement. And now that it is to THEIR benefit, they have the nerve to tell us that an interoperable radio is more likely. Given their record on interoperable radios, the Commission should have little confidence that a receiver capable of delivering a la carte will be made available anytime soon. It depends, according to XM and Sirius, on market forces to determine what receivers are manufactured. I am not sure what is in it for manufacturers. We may never see them.

33. Furthermore, there is no evidence that XM and Sirius have made their agreements non-exclusive since their October 2000 letter and there are no interoperable radios available to the public. This would have certainly helped push the standardization of interoperable radios:

Both companies are working with their automobile and radio manufacturing partners to integrate this new unified standard and, to insure the public realizes the benefits of interoperable radios, have agreed that future agreements with automakers and radio manufacturers will specify the unified satellite radio standard. Furthermore, Sirius and XM have agreed that future agreements with retail and automotive distribution partners will be on a non-exclusive basis. Therefore the two licensees have an economic incentive to deploy quickly interoperable receivers.

Through this collaborative effort to produce a unified standard for satellite radios, Sirius and XM will offer manufacturers the means to produce cheaper and smaller interoperable receivers. The FCC gave the satellite DARS licensees the freedom to integrate ever-advancing technological developments into their interoperable receiver design when it decided not to "mandate the use of one form of technology."⁸ Sirius and XM are pleased to notify the Commission that they are taking advantage of this opportunity so that consumers will pay less for smaller interoperable receivers in the future.

34. Had XM and Sirius implemented an interoperable receiver, there might have been some public benefit to the merger in the way of expanded, more diverse content. Now they tell us that they won't merge to a common platform 10 to 12 years after the merger. The problem is of their own making and they want the consumer to bear the consequences and the costs.

4. Competition

35. Recognizing that the merger of XM and Sirius is anticompetitive, XM and Sirius have now offered a la carte pricing as a way to mitigate the anticompetitive effects; otherwise, there would have been no need to offer lower priced options. They are simply buying their way into the merger. The combined entity plans to offer an impressive array of choices for the consumer and this is certainly a public benefit. However, it is an artificially created benefit. It is also non merger-specific. The two could offer a la carte pricing at any time without the anticompetitive effects of a merger. They would have us believe that it is only possible to offer a la carte pricing as part of a merged company, that they are just passing along the cost savings to the consumer. It simply is not plausible that two companies currently losing hundreds of millions of dollars annually

could suddenly offer price concessions. It concerns me as a shareholder. I urge the Commission not to mandate any type of cost controls to remedy the anticompetitive effects. It either stands on its own or it doesn't. Why use government regulation when competition will suffice?

36. If the two could move to a single platform in a year or two, it might be a public benefit.

The two are well positioned to offer expanded, more diverse programming in the bandwidth that would be freed up, provided the system could handle it. They would not have to sacrifice sound quality or make decisions about which channels are the most popular. This is the best chance that we will see the promise of satellite radio fulfilled with a wide variety of niche and minority programming not subject to the desires of the majority of listeners. If the plan by XM and Sirius is allowed to be implemented using each band to broadcast substantially the same thing, the diversity of programming can't change outside of what it is today without making sacrifice. It is the programming on the other fringes that will be sacrificed. The a la carte pricing almost ensures that content that is rarely selected will be replaced with something else. Outside of a single platform, the Commission should consider ways to ensure competition in satellite radio.

37. If we take them at their word, the combined entity should be able to increase its broadcast efficiency by a minimum of 8.5%. Since most of the premium content on the two services is talk or sports, the two should be able to combine into one bandwidth. For example, using their own figures, it was determined that 11 channels could be added--7 music, 4 talk. This equates to over 21 talk channels²⁰. This is more than enough, it would seem, to add Howard Stern, NFL, Martha Stewart, and the college sports to XM, for example.

38. Primosphere has indicated that it is interested in becoming a SDARS provider. It is one of four entities legally eligible to hold a SDARS license²¹. Consequently, it is in a unique position in these proceedings.

39. If XM and Sirius cannot be merged to a single platform within a year or two, then there is no public benefit. Therefore, in this case, the Commission should maintain the rule preventing control of both SDARS license by the same entity, should the Commission see fit to allow the merger. In this case, Primosphere could be used as an option to ensure that satellite radio has competition. I urge the Commission to seriously consider Primosphere as a competitor and grant them one of the licenses, if XM and Sirius cannot efficiently use the public's resources as a result of a merger.

5. Conclusion

40. First, I urge the Commission to deny the merger because of the anticompetitive effects.

41. Secondly, if the Commission approves the merger, I urge the Commission to waive the rule regarding the control of both licenses by a single entity, if XM and Sirius can move to a single platform in one or two years after the merger.

42. In the event that XM and Sirius cannot move to a single platform in one or two years, I urge the Commission to grant Primosphere one of the licenses and rights to the associated satellites.

43. Finally, I urge the Commission to reject any consideration of price controls as a public good or as a means to mitigate the anticompetitive effects.

²⁰ Seven music channels at 40 kbps equates to $7 * 40 \text{ kbps} / 16 \text{ kbps} = 17.5$ talk channels plus 4 additional talk channels equals 21.5 talk channels.

²¹ 47 C.F.R. § 25.144(a)(1). The four entities eligible for licensing in SDARS are: Satellite CD Radio[Sirius]; Primosphere Limited Partnership; Digital Satellite Broadcasting Corporation; and American Mobile Radio Corporation[XM].